Acumen SCOOTER

Installation and Operation

Contents





The Acumen SCOOTER can be upgraded from the standard key fob to the CAT1 and CAT21 fob with key conversion and LED torch Contact Acumen or your Dealer

Installation and Wiring

The Acumen SCOOTER consists of the following main components;

- SCOOTER main unit ECU (Electronic Control Unit)
- SCOOTER wiring harness
- 1 x Remote Fob
- Fitting kit including System fuse, spare fuse & Red LED system indicator

Tool Required:

- Pliers/Cable strippers/Cable cutters
- Drill with 5.5mm and 8mm bits
- Soldering equipment
- Adhesive lines heatshrink tubing
- High quality insulating tape
- Masking tape (for drilling LED hole)
- Multimeter
- General workshop tools
- Scooter wiring diagram

SCOOTER main unit ECU (Electronic Control Unit)

Ensure the fitting of the equipment and the associated wiring does not affect the operation of the scooter. Be sure the alarm and wiring does not affect moving parts (such as control cables, brakes) and does not touch hot parts.

The SCOOTER is designed for scooter use and is fully encapsulated so water ingress is not of a concern. Likewise, the Key Fob is also of a waterproof design. We recommend however that the unit is not placed in a position where it is continually subjected to water and/or pressure washing.

Siting/positioning the SCOOTER main unit/ECU (Electronic Control unit)

When mounting the unit, use the 5mm screws/nuts supplied in the fitting kit or cable tie the unit to a suitable frame tube. Take care to mount the unit where access to it is protected (the more difficult it is to reach, the harder the job the 'thief' has to bypass the alarm).

Route the wiring alongside the scooter wiring, and tape it in the style of the original scooter wiring.

Siting/positioning the LED system Indicator

Be aware the LED will result in a small increase of electrical current drain. The LED draws 1mA of electrical current. The LED provides a visual indication of the alarm's status, helps with the diagnostic mode of the alarm, and will warn a potential thief that your scooter is alarmed and that the alarm is armed.

For this reason, it is preferable to position the LED where it can be easily seen. Having decided on a suitable position, drill an 8mm hole, pass the LED through from the back of the hole and then insert the LED into the LED holder. Then push the LED holder back into the 8mm hole to mount it securely. Route the LED wires to the position of the SCOOTER ECU.

The alarm has a loom which ends in a 6-way connector. This connector connects to the wiring loom which is connected to the scooter.

Installation and Wiring

Connect the system wires as follows:

A larger version of the wiring diagram can be found on the back page.

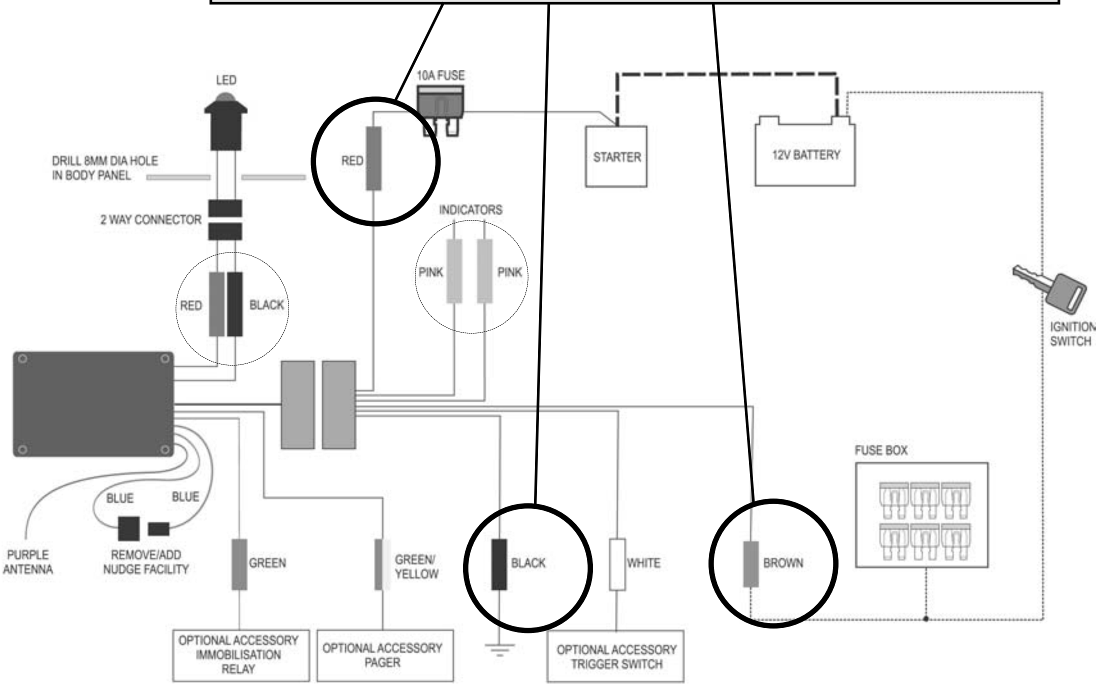
The **RED** wire is the alarm positive feed. DO NOT connect this directly to the scooter battery, but connect to the positive terminal of the starter solenoid. Use the Red-tagged ring terminal from the fit kit.

The **BLACK** wire is the alarm negative connection. Connect this wire to a suitable earthing point on the scooter frame. DO NOT connect to the battery negative terminal. Do NOT connect it to a sub-frame or fairing-frame. An ideal spot is the connection of the scooter battery negative lead & frame. Use the Blue-tagged ring terminal from the fit kit.

The **BROWN** wire should be connected to a circuit which becomes live when the ignition is switched on. Ideally, this should be connected between the ignition switch and the scooter fuse box. If this is not practical, a good place is the feed to the rear brake light switch. Acumen recommends this connection is soldered.

Connect the 6-way connectors together and proceed to Operation

To make the alarm active, you only need to connect the **Red, Black** and **Brown** wires



To get full basic operation of the SCOOTER System, Acumen recommends that you also connect the PINK (indicators) and Black/Red (LED) wires (see page 3)

Should you require further options on the CAT 3 system, please see the Optional Wiring (see page 3)

Optional Wiring

Acumen recommends that the following wires are connected to get full basic operation of the SCOOTER System, however, they are not critical to the operation of the system.

Flashing Indicators

The two **PINK** wires are for the indicators. Connect one Pink wire to the LH indicator, and the other Pink wire to the RH indicators. Ensure you connect these wires to the positive side of the indicators - if you connect to the negative side of the indicators the alarm fuse will fail. Acumen recommend these connections are soldered.

Flashing LED

The paired **Black/Red** wires with the two-way connector are for the LED system indicator. Connect the two plugs together.

Movement Sensing Nudge Facility

The two **BLUE** wires - one with a male connector on it, one with a female connector - are to remove/add the nudge facility of the movement sensing.

- If the two blue wires are connected, the nudge sensing is added.
- Dis-connecting these two wires removes the nudge sensing.

Optional Wiring Connections (not required for basic operation)

The **YELLOW/GREEN** wire is the Pager wire. It supplies 12v at 0.5A when the alarm is reacting. It is designed to connect to the Acumen AlarmMate Pager (Acumen Pt No 10114) and/or the Acumen external siren (Acumen Pt No 10115) .

IMPORTANT

If this wire shorts to Ground while the alarm is sounding the alarm ECU will be damaged.

The **PURPLE** wire is the alarm antenna. It should be extended along a plastic component and taped into position. Do not tape within the wiring harness and do not connect to ground/earth.

The **GREEN** wire is the trigger wire for the optional Immobilisation relay. Instructions for connection are included in the immobilisation kit. If you are not using it, tape the wire to the main harness in a tidy fashion.

The **WHITE** wire is an optional Trigger wire. If you need to use this circuit, the alarm will trigger if the switch you add to this circuit changes it's state. (ie; open to closed, or closed to open) Connect the wire to a switch and the other side of the switch to a suitable ground. When the switch changes the alarm will sound. It can be connected to items such as a magnetic reed seat switch, or pressure mat under the m/c side stand, or the Acumen garage kit.
See www.acumen-electronics.co.uk

NOTE If a poor connection is made in this circuit the alarm will interpret any change of state - regardless of how short in time - as an alarm and will react accordingly. Make sure all connections are sound, waterproof and cannot short.

Operation

The visual indications are based on the assumption that the Pink wire (Indicators) and the Black/Red wires (LED) have been connected (See page 3).

The standard key fob has three buttons; Lock, Unlock and Silent.

To Arm the system.

Press the Lock button of the fob. The alarm will beep twice and flash the indicators twice. The system LED will start to flash after 5 seconds and the unit will monitor hot-wire, accessory switch, movement and nudge. (The system will not arm if the ignition is switched on).

To Disarm the system.

Press the Unlock button. The system will give one short beep and flash the indicators once.

NOTE If the system gives one long beep this means the alarm has been sounding. Enter diagnostics mode to find the reason why.



Convenience (Ferry) Mode

In Convenience mode the movement/nudge sensor will cease to function. With the alarm active, press the Silent button. You will get one long tone and one flash of the indicators.

If the LED flashes once/per second the movement sensing is active

If the LED flashes once every two seconds, the movement sensing is disabled.

You can ‘toggle’ between Convenience Mode enabled and disabled by simply pressing the silent button.

Diagnostics Mode

It is possible to determine the trigger source that caused the alarm to sound. Only the last reason is recorded.

Diagnostic mode can be accessed two ways;

a. When the alarm is sounding the LED will flash a number of times, pause, then flash the same number again. This will go 30 seconds until the system stops sounding.

b. Alternatively, disarm the alarm and then press the silent button. The LED will flash a number of times and the system will beep the same number of times. Every time you press the silent button the system will flash/beep in accordance with the following table.

Number of Flashes/Beeps	Trigger Reason
1	No Triggers in last armed period
2	Power was interrupted (The SCOOTER does not have an internal battery but if the power is disconnected when the unit is armed, and then re-connected it will give a reaction.)
3	Ignition turned on or hot-wired
4	Movement
5	Accessory switch was operated

New Key Fob/Lost Key Fobs

If you can disarm the system - ie; you have a working fob and need to add another;

1. Switch ignition off
2. Disarm the system from the fob
3. NOTE Sections 4 and 5 must be completed within 10 seconds
4. Switch the ignition on-off 5 times in quick succession, leaving the ignition ON at the 5th action
5. Change the state of the accessory switch circuit - WHITE wire (ie; connect to ground if not connected and vice versa) The unit will beep once and enter learn mode
6. Press and hold the Lock button until the unit beeps then release it
7. The unit will beep twice
8. Press and hold the Lock button again and the unit will beep three times.

If the system is dis-armed but you don't have a working fob (you have lost all working fobs);

1. Switch off the scooter ignition
2. Remove alarm fuse
3. Leave for 5 minutes
4. Reconnect alarm fuse (and within 10 seconds perform sections 5 & 6)
5. Switch the ignition on-off 5 times in quick succession, leaving the ignition ON at the 5th action
6. Change the state of the accessory switch circuit - WHITE wire (ie; connect to ground if not connected and vice versa) The unit will beep once and enter learn mode
7. Press and hold the Lock button until the unit beeps then release it
8. The unit will beep twice
9. Press and hold the Lock button again and the unit will beep three times

If the system is armed and you don't have a working fob (you have lost all working fobs);

1. Ensure the scooter ignition is switched off.
2. Remove the alarm fuse
3. Leave for 5 minutes
4. Replace the alarm fuse - the alarm will sound for 30 seconds (unless the system has sounded 10 times for power loss in which case there will not be an audible reaction but wait 30 seconds) Ensure the ignition is OFF during this time and ensure the alarm is not triggered by accessory switch or movement
5. Trigger the alarm by turning ON the ignition. When the alarm sounds turn the ignition OFF. When the siren stops after 30 seconds (ie; during the quiet time) you have 10 seconds to perform steps 6 & 7
6. Switch the ignition on and off 5 times, leaving the ignition ON at the fifth action
7. Change the state of the accessory switch circuit - WHITE wire (ie; connect to ground if not connected and vice versa) The unit will beep once and enter learn mode
8. Press and hold the Lock button until the unit beeps then release it
9. The unit will beep twice
10. Press and hold the Lock button again and the unit will beep three times.

Troubleshooting

1. The alarm will not react to the fob

a. Check the fob batteries (type CR2016).

b. Place the fob as near as possible to the alarm system main unit. If it will now disarm there are probably spurious radio signals in the vicinity. Move the scooter to another area.

c. Check the system fuse. If the alarm has no power it cannot power the radio receiver. Switch on the scooter ignition - if it disarms now the alarm's power supply is at fault (fuse or connections).

2. False alarms.

Remember! The alarm may think it is being stolen, which is different to it being faulty!

a. Enter Diagnostic mode and find out why the alarm is/was reacting.

b. Take appropriate action - such as:

   i. Enter Convenience Mode if it's a windy day (see page 4).

   ii. Check earth/power connections if you repeatedly get a 'power interrupted' signal.

3. The alarm fuse keeps failing.

The system cannot 'blow' the fuse. It is what the alarm switches that blows the fuse - usually the indicators. Make sure there are no shorts in the indicator system and if a new fit, make sure the alarm PINK wire(s) is/are not connected to the negative side of one, or both of the m/c indicators.

Spares and Accessories

Acumen can supply a range of spares & accessories to enhance the features of the SCOOTER system:

1. Spare and replacement remote fobs and batteries.
2. The key fob can be up-graded to the same flip-fob as used on the Acumen 'Thatcham' specification CAT1 and CAT21 systems. The Flip-fob uses Microchip KeeLoq® code-hopping technology which prevents scanning and recording of transmitter codes. When ordering, specify Acumen part number 51020 and your make, model and year of scooter.

NOTE The Acumen SCOOTER cannot 'know' both types of fob at the same time. If it 'knows' the standard fob, it cannot 'know' a flip fob at the same time. It can 'know' 2 x standard fobs at the same time, or 2 x flip fobs at the same time, but not 1 of each.

3. Different coloured System LED's to match your scooter (Green, Red, White, Blue, Yellow)
4. Acumax 900 Intelligent 'float' battery charger
5. Extra, external sirens. (If your SCOOTER system is 'buried' in the scooter, the audible warning may not be as loud as you would like. This extra siren will allow you to position it where the sound can get out.)

The SCOOTER can be further upgraded;

Upon request, Acumen will supply you, free of charge, with a protecting 'clamshell' to prevent easy disconnecting of the alarm system. The clamshell will prevent easy unplugging of the 6-way connector.
Please request Acumen part number C-07-0003

The SCOOTER also has the ability to be connected to the following optional components;

1. Starter immobilisation kit
   (Acumen part number 10113)
2. Acumen AlarmMate pager
   (Acumen part number 10114)

General Security Precautions.

While the Acumen SCOOTER provides state of the art electronic security and protection, it will not, by itself, ensure your scooter will not be stolen. We recommend you undertake basic security precautions such as;

Parking in a locked garage if possible,

Parking in well lit areas if a garage is not applicable,

Using a bike cover where appropriate,

Using a chain or shackle and ground anchor.

Warranty terms and Conditions

Full details are given in the Terms and Conditions document.

www.acumen-electronics.co.uk

Wiring Diagram

